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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,365	11/29/2001	Walter H. Ohrbom	IN-5113	5536

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EXAMINER

ASINOVSKY, OLGA

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 04/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/998,365

Applicant(s)

Ohrbom et al

Examiner

Olga Asinovsky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Jan 30, 2003
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 6 6) ☐ Other:

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### DETAILED ACTION

There is no amendment to the original claims 1-18.

#### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto et al

U.S. Patent 5,187,229.

The present invention is a method of making functional urethanized acrylic graft polymer comprising producing an acrylic backbone polymer having at least one cyclic carbonate group, having a chemical structure specified in the present claim 1, and grafting at least one grafting material comprising at least one amine group onto a said acrylic backbone polymer such that a reaction occurs between the at least one amine group and cyclic carbonate functional group for producing a hydroxyl functional urethanized acrylic graft polymer.

The new search has been made in the light of applicants' argument that there is no equivalency of cyclic carbonate groups with epoxy groups (page 1 in applicants' remarks).

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Yamamoto discloses a product obtained by reacting an amine compound (A) and an acrylic copolymer (B) containing cyclocarbonate group as a side chain at a functional group number of 0.7 to 3.0 per molecule, column 3, lines 4-6, column 6, lines 4-5 and 8-9 and column 49, lines 23-35. The reaction of cyclocarbonate group with amine group is shown at column 7, scheme (3). The acrylic copolymer containing cyclocarbonate group in Yamamoto's invention is the same as applicants' claimed acrylic backbone polymer (b) comprising one or more cyclic carbonate functional groups (bi). The amine compound (A) having at least one amine group is applicants' claimed (ci) grafting material, column 5, lines 24-68. Yamamoto discloses a product obtained by reacting an amine compound with the cyclocarbonate functional group for producing a hydroxyl functional urethanized acrylic graft polymer for the present claim 1.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al U.S. Patent 5,187,229.

All discussion in the paragraph 2 above is adequately set here.

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In addition, the product obtaining by reacting an amine compound (A) and an acrylic copolymer (B) containing cyclocarbonate group is also reacting with a polyester oligomer component (C) containing functional groups such as isocyanate group or acetoacetoxy group in its terminal, column 8, line 49 through column 9, line 18. The functional groups in component (C) in Yamamoto are readable in the present claims 2-18. Yamamoto discloses methods for producing a reaction product, wherein the component A being reacted with the component B and the component C is added thereto, or the component A being reacted with the component C and then the component B is added thereto, column 14, lines 40-45. Therefore, there is an evidence in Yamamoto's invention that a functional group in a polyester oligomer is not reactive with the cyclocarbonate functional group under free radical polymerization conditions. A polyester oligomer having a functional group in Yamamoto would be readable in as one or more compound (d) having functional group in the present claims 15 and 17.

The difference between the present claim 2 and Yamamoto is that the monomer mixture (a) further comprises one or more additional ethylenically unsaturated monomers (aii) having functional groups which are unreactive with the cyclic carbonate functional groups of monomer (ai) under free radical polymerization conditions for the present claim 2. Yamamoto discloses a polyester oligomer having functional group.

It would have been obvious to one of ordinary skill in the art to consider that a polyester oligomer having functional group in Yamamoto invention is a conventional alternative to an additional ethylenically unsaturated monomer having the same functional group for obtaining the

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same expectation of adequate results because the component (C) in Yamamoto is not reactive with the cyclocarbonate functional group under free radical polymerization conditions.

Also, it would have been obvious to one of ordinary skill in the art to select an acrylic copolymer having a cyclocarbonate functional group in Yamamoto's invention for obtaining the applicants' claims, because the epoxy groups, acetoacetoxy group and cyclocarbonate group react with the amine group within the same expectation of adequate results in Yamamoto's invention.

#### ***Claim Rejections - 35 USC § 112***

5. Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The structural formula in each independent claims 1, 15 and 17 is defective because the carbon has 5 valences. It should be corrected since the carbon has four valences.

#### ***Specification***

6. The disclosure is objected to because of the following informalities: In the specification at pages 3 and 5 in the structural formula carbon has five valences.

Appropriate correction is required.

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art is relevant to show the state of the art knowledge.

This action is not final since there are new rejections.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga Asinovsky whose telephone number is (703) 308-0041. The examiner can normally be reached on Monday to Friday from 9:00am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck, can be reached on (703) 308-2462. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-7718 and (703) 872-9311 after final.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

O.A.

O.A.

March 27, 2003



James J. Seidleck  
Supervisory Patent Examiner  
Technology Center 1700